REMARKS

Favorable consideration and allowance of claims 1-4 are respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1-4 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Ujiie (US 6,748,346). Applicant respectfully traverses the rejection as set forth below.

Claims 1 and 3 are amended to further define that the parts model is formed of one body that has a shape changing element in part of the body whose shape becomes different shapes between before and after assembling. Support for these amendments is present, for example, in FIGS. 7 and 8 of the application.

Applicant submits that Ujiie does not teach or suggest "holding, in three-dimensional shape information of a parts model that is formed of one body that has a shape changing element in part of the body whose shape becomes different shapes between before and after assembling and other common elements whose shapes do not become different shapes between before and after assembling, three-dimensional information on the shape before assembling and the shape after assembling of the shape changing element and the shape of the common elements," as claimed in amended claim 1.

Amended claim 1 provides that a two-dimensional drawing is created based on 3-D shape information of a parts model "that is formed of one body."

This improves efficiency, since the common elements only select the restriction condition for the assembled state and the unassembled state without providing the shape before and after assembling individually. Further, the parts model and the two-dimensional drawing match correctly.

In particular, the efficiency characteristics for 2D-drawings can emphasize that when the three-dimensional model "that is formed of one body" is composed of multiple parts that are required by a large number of parts having a complicated shape, multiple parts are required to construct the model. Further, when the multiple parts of the three-dimensional model that "is formed of one body" are composed of a large number of the common elements and a small number of the shape changing elements, the method of amended claim 1 can create and offer a more efficient two-dimensional drawings based on the three-dimensional model, since it creates the two-dimensional drawing using the common elements in the two-dimensional drawing for both before and after assembling.

Thus, in amended claim 1 the parts model and the two-dimensional drawing are matched by setting restriction conditions, i.e., the first condition between the shape before assembling of the shape changing element and the shape of the common element to become a single part to each other and the second condition between the shape after assembling of the shape changing element and the shape of the common elements to become a single part to each

other. The shape of parts with "the shape changing element" between before and after is different for each state (before/after assembly). Thus, amended claim 1 can set by restriction the parts model between the shape before and after assembling of the shape changing elements, and therefore the parts model and the two-dimensional drawing can match correctly without conflict of the two-dimensional parts model, as described, for example, in paragraph [0006] of Applicant's specification.

Ujiie discloses an interference verifying device and method for checking whether or not an assembly can be made by performing interference verification and checking a part shape change in relation to the assembly route which the route on the parts to be assembled move from current positions to target position in the product assembly process. The assembly simulator 25 in Ujiie determines whether or not the selected part reaches the final position while moving the selected part along the specified route (Fig. 8, steps S3, S4). When the selected position does not reach yet to the final position (the finish position of assembly), the interference verification unit 29 determines whether or not interference (contact) with the counter part occurs while moving (step S5).

As illustrated in Fig. 8 of the reference, if the interference verification unit 29 of the assembly simulator 25 judges the interference (contact) with the different part (S5) and the element of the selected part has interference with the shape after being changed in step S6, terminates the process as to judge that

interference occurs (S11). That is, if the contact of the selected part occurs to the changed shape of counter part which is deformed by assembling to the selected part as defined in Table 42, the interference verification unit 29 judges that it cannot assemble the selected part with the counter part due to the interference. Thus, when the interference of the selected part with the counter part is detected by the interference verification unit 29 in the final assembly, it cannot assemble the selected part with the counter part because of this interference.

Applicant's claim 1 provides a two-dimensional drawing creation based on the 3-D model and 3-D shape information combining the shape changing element and the common elements of the one body before and after assembling. That is, the 3-D model for the two-dimensional drawing creation is defined by the one body, which parts are composed of the shape changing element in part of the body and other common elements.

Ujiie provides an interference verifying device and method that can be made using a CAD system for simulation for checking whether or not an assembly can be made by performing interference verification. The parts of Ujiie are independent and separate from each other before assembly and can only integrate into one body by assembly, and thus, are not one body before assembly. By contrast, the parts model claimed in amended claim 1 is formed of one body before assembly. This difference of parts model in between the amended claim and Ujiie derives from the difference of object between the two-dimensional

drawing creation of the claim 1 and the interference verification device of Ujiie. Thus, Ujiie does not disclose the two-dimensional drawings creation method of creating two-dimensional drawings based on a three-dimensional model by using a computer as claimed in amended claim 1. Therefore, claim 1 is patentable over Ujiie.

Claim 2 is patentable due to its dependence from claim 1.

Claim 3 is patentable for reasons analogous to those for claim 1, and claim 4 is patentable due to its dependence from claim 3.

In view of the foregoing, Applicant submits that the application is in condition for allowance, and such action is earnestly solicited.

If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 038921.58289US).

Respectfully submitted,

January 12, 2009

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